AU9348748

(12) PATENT ABSTRACT (11) Document No. AU-A-48748/93
(19) AUSTRALIAN PATENT OFFICE

(54) Title
INSPIRATORY AIRWAY PRESSURE SYSTEM

(51)[5] International Patent Classification(s)
A61M 016/00

(21) Application No. : **48748/93** (22) Application Date : **01.10.93**

(30) Priority Data

(31) Number	(32) Date	(33) Country
354143	**19.05.89**	**US UNITED STATES OF AMERICA**

(43) Publication Date : **09.12.93**

(62) Related to Division(s) : **33877/93**

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(57) Claim

16. Apparatus for treating obstructive sleep apnea, said apparatus including:

a blower which continuously provides ambient air at positive pressure of a magnitude at least equal to ambient atmospheric pressure;

a conduit coupled to said blower and coupled to the airway of a sleeping, spontaneously breathing patient;

a vent valve in fluid communication with said blower and said conduit;

a pressure controller coupled to said vent valve and capable of maintaining a set point pressure to the airway of the patient; and

coordinating means for adjusting the set point pressure of said pressure controller with the occurrence of the inspiratory and expiratory phases of the breathing of the patient, wherein the magnitude of the positive pressure maintained during the expiratory phase is less than the magnitude of the positive pressure maintained during the immediately preceding inspiratory phase.

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1. A method of treating a sleeping, spontaneously breathing patient suffering from obstructive sleep apnea, wherein the airway-defining tissues and muscles of the sleeping patient occasionally partially or fully relax causing partial or complete blockage of the airway of the patient, said method including the steps of:

using an apparatus which is not a lung ventilator to substantially continuously provide breathing gas at positive pressure of a magnitude at least equal to ambient atmospheric pressure to the airway of a patient;

coordinating the magnitude of the airway pressure of the patient with the occurrence of alternating inspiratory and expiratory phases of the respiration of the patient;

maintaining the positive pressure in the airway of the patient substantially continuously during a sequence of the inspiratory and expiratory phases such that the magnitude of the positive pressure maintained during each of the expiratory phases is less than the magnitude of the positive pressure maintained during the immediately preceding inspiratory phase; and

selectively venting breathing gas to change the magnitude of the positive pressure in coordination with the inspiratory and expiratory phases.

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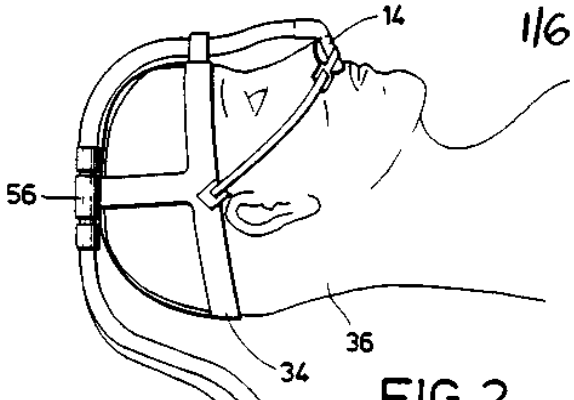


FIG. 2

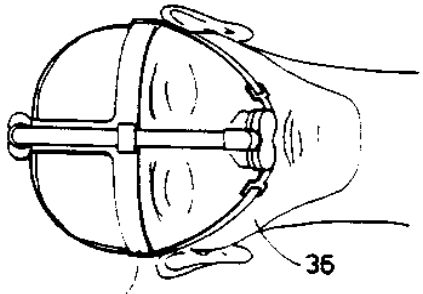
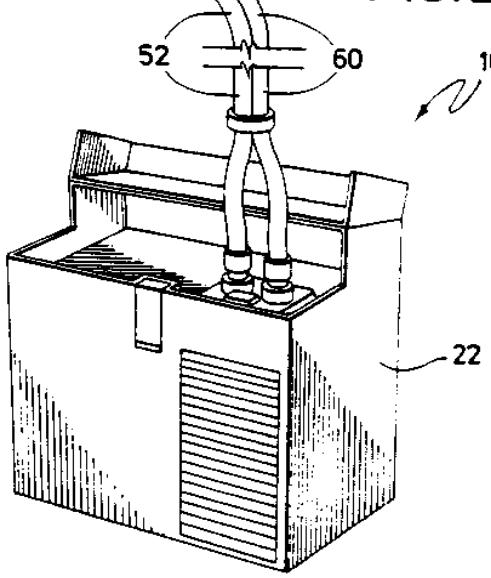


FIG. 1



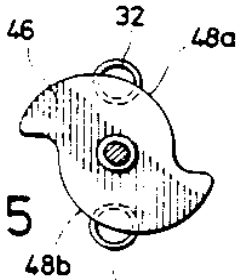


FIG. 5

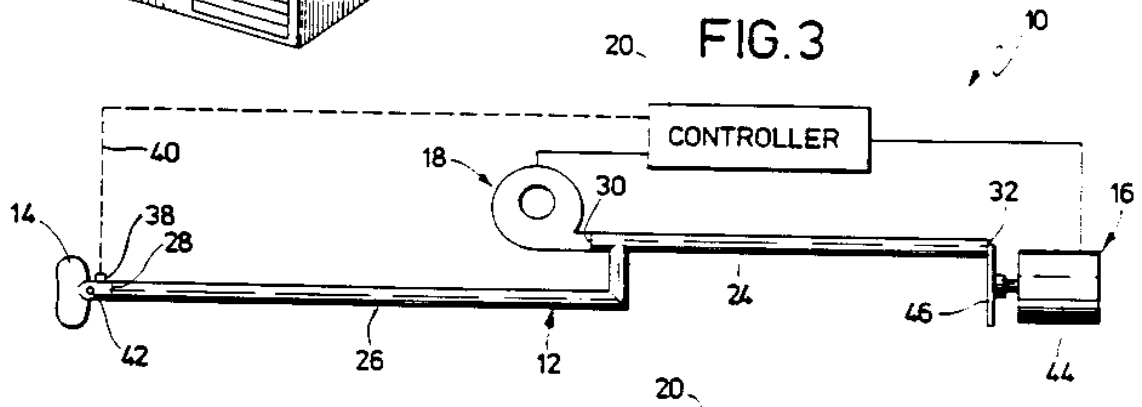


FIG. 3

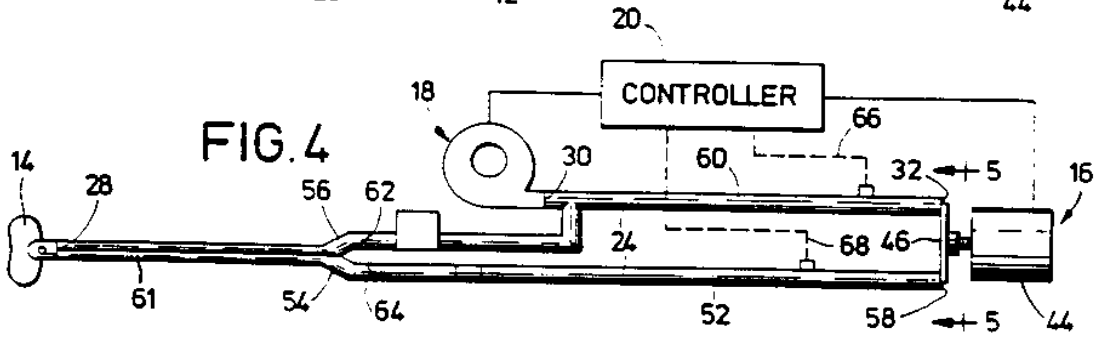


FIG. 4